

PCT/EP00/02132
Bärlocher GmbH
PCT1147-00936/co
September 6, 2000

New patent claims 1 to 13

1. A stabilizer combination for halogen-containing thermoplastic resins, encompassing:

a) calcium oxide and/or calcium hydroxide, where these, where appropriate, may have been surface-modified, and have a particle size of not more than 200 μm ;

b) at least one tin compound of the general formula (I)



where

n is 1 or 2;

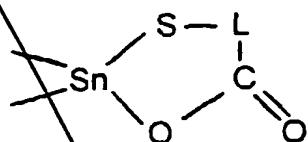
each of the groups R, which may be identical or different, is a straight-chain or branched alkyl group having from 1 to 22 carbon atoms;

each of the groups X, which may be identical or different, is -S- or -O-; and

each of the groups R', which may be identical or different, is a straight-chain or branched alkyl group having from 1 to 22 carbon atoms, or a $-\left[\text{C}(\text{O})\right]_m-\text{L}-\text{C}(\text{O})-\text{O}-\text{R}''$ group or a $-\left[\text{C}(\text{O})\right]_m-\text{L}-\text{O}-\text{C}(\text{O})-\text{R}''$ group, where m is 0 or 1, -L- is a divalent connecting group which is selected from alkylene groups having from 1 to 4 carbon atoms, or a vinylene group, and R'' is an alkyl group having from 1 to 22 carbon atoms; or

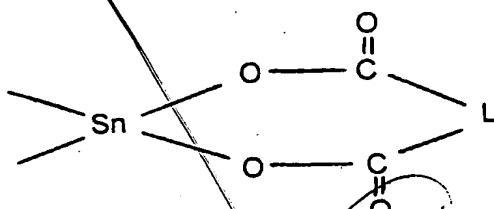
SUBSTITUTE SHEET

two ($X-R'$) groups may have bonding to one another to form a heterocyclic ring of the formula (I') or (I'')



(I')

or



(I'')

where L is as defined above; and

c) at least one zinc compound selected from liquid and solid zinc salts of saturated, unsaturated, straight-chain, or branched mono- or polyfunctional aromatic or aliphatic carboxylic acids, zinc oxide and zinc hydroxide;

with the proviso that no perchlorate is present in the stabilizer combination.

2. A stabilizer combination as claimed in claim 1, wherein the amount of component (a) present is from 0.1 to 5 parts by weight.

3. A stabilizer combination as claimed in either of claims 1 and 2, wherein component (b) is at least one tin compound of the formula (I), where R is an alkyl group having from 1 to 8 carbon atoms.

4. A stabilizer combination as claimed in any of claims 1 to 3, characterized in that component (b) is at least

SUBSTITUTE SHEET

one tin compound of the formula (I), where R' is an alkyl group having from 8 to 18 carbon atoms, or a $-\left[\text{C}(\text{O})\right]_m\text{-L-C}(\text{O})\text{-O-R''}$ group or a $-\left[\text{C}(\text{O})\right]_m\text{-L-O-C}(\text{O})\text{-R''}$ group, where -L- is a methylene, ethylene, or vinylene group, and R'' is an alkyl group having from 6 to 12 carbon atoms.

5. A stabilizer combination as claimed in any of claims 1 to 3, characterized in that component (b) is at least one tin compound of the formula (I), where two (X-R') groups have bonding to one another to form a heterocyclic ring of the formula (I') or (I''), where -L- is an ethylene group or a vinylene group.

6. A stabilizer combination according to any of claims 1 to 5, characterized in that the amount of component (b) present is from 0.1 - 3 parts by weight.

7. A stabilizer combination according to any of claims 1 to 6, characterized in that component (c) is a zinc salt of a saturated aliphatic carboxylic acid having from 10 to 18 carbon atoms.

8. A stabilizer combination as claimed in any of claims 1 to 7, characterized in that the amount of component (c) present is from 0.1 to 3 parts by weight.

9. A thermoplastic resin composition, comprising at least one halogen-containing thermoplastic resin and a stabilizer combination according to any of claims 1 to 8.

10. A thermoplastic resin composition according to claim 9, characterized in that the halogen-containing thermoplastic resin is polyvinyl chloride.

11. The use of the stabilizer combination according to any of claims 1 to 8 for stabilizing halogen-containing thermoplastic resins.

12. The use according to claim 11 for stabilizing polyvinyl chloride (PVC)

13. The use according to claim 12 for stabilizing rigid PVC (UPVC).

Add A1

SUBSTITUTE SHEET